



PATENT

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KIOSK APPARATUS AND METHOD FOR POINT OF  
PREVIEW AND FOR COMPILATION OF MARKET DATA

Technical Field

This invention relates generally to the use of CD-ROM stored audio and video data and to point of sale preview apparatus, and more particularly this invention relates to a kiosk for the playback of selected data fragments in response to a user authorization signal and to a user selection signal.

Background of the Invention

This invention relates to a system for user-interactive multimedia based point-of-preview at a remote location, particularly for use in the music industry.

The 1980s witnessed a tremendous rise in consumer demand for home entertainment products particularly for the compact disc player. Wide consumer acceptance has been the result of more affordable ownership costs, superior sonics (compared with LPs and cassettes) and remarkable ease-of-use. In the United States alone, total sales of CD players skyrocketed from 1.2 million units in 1985 to over 17 million units in 1989 (over three times the growth rate of VCRs). CD players now represent one third of all new audio component sales with projections pointing to total U.S. sales topping 30 million players in the U.S. by 1991 -- making the CD player the fastest growing consumer electronics product in the last twenty-five years.

Despite the explosion of CD player sales, most consumers own very few CDs (studies indicate the average CD player owner possess only nine discs). When it comes to purchasing a specific compact disc, the consumer is faced with several constraints and

dilemmas. Compact discs, LPs and cassettes, are roughly twice the retail price (14-\$16) and as a result, the consumer is more reluctant to explore new and/or unproven artists for fear of wasting money.

5 Moreover, there is the issue of "selection stress", a common problem for the average music buyer who is confronted with an enormous catalogue from which to choose and few mechanisms to assist him or her in evaluating these choices. The typical retail music  
10 store has developed the "superstore" format in which to promote its products, yet salespeople generally have not kept pace with the sophistication of the market. Hence, consumers are at a clear disadvantage. They cannot sample or interact with  
15 the product while in the music store and they cannot return products they do not like. Although many consumers wish to build larger collections, buying decisions are often risky and mistakes are costly.

At the artist level, the proliferation of new  
20 music markets, styles and tastes has caused the number of record labels to increase dramatically. The record industry has expanded from several major labels in 1970 to more than 2,500 distributed and independent labels today. Each year more than 2,500  
25 new artists are introduced into an already crowded market.

Currently, label executives have no way to test  
market their respective acts or albums before dollars  
are committed to the production, promotion and  
30 distribution process. Further there is no current methodology to build consumer awareness of the act, or to increase the act's base outside of radio and television or concert tours. Print media is heavily  
utilized by the retail music stores to draw attention  
35 to new and old labels and special promotions. This

activity is heavily subsidized by the music label to promote their individual artist.

Each label is responsible for the recruitment, development and promotion of individual artists. The  
5 glut of records prevents inhibits exposure at the retail level and over the airways. Some record companies have been compelled to establish marketing promotions where records are given away to promote awareness of certain acts. Because a greater  
10 investment of time, money and creativity is required to develop many of today's acts, label managers acknowledge that they are more likely than ever to cut short promotion in order to cut their losses quickly on albums that don't show early signs of  
15 returning the investment. This strongly limits the potential for success because some artists require longer and more diverse promotion.

One type of music sampling device is called PICS Previews. Although it permits some in store  
20 sampling, its use is severely limited. Its primary format is based on the hardware configuration and is not easily modifiable. The device incorporates a television screen with a large keypad covered with miniature album covers, and these are locked into a  
25 laser disk player. A master disk which holds a fixed number of videoclips -- usually about 80 -- is used as the source of music information. The consumer is permitted to view a video which represents a selection from the album. However, information from  
30 only those artists who have made a video and who are featured on the PICS can be accessed. The consumer cannot make his own selection. The selections are not necessarily those that are in the store inventory.

Another in-store device traded as Personics System provides the user with the ability to make customized tapes from selected music stored on the machines. This device is expensive to use and is time consuming. Exposure to artists is limited. The device is viewed by record production companies as cannibalistic. Record production companies have been reluctant to permit the new songs of their top artists to be presented on these devices.

Presently, the store clerk or cashier tends to utilize the in-store sound system to develop their individual musical tastes. Selection tends to be progressive, with little consumer appeal.

summary of the Invention

The present invention is directed to a user-interactive multimedia based point-of-preview system. In particular, there is provided interactive digital music sampling kiosks to the retail music industry. The listening booth of the 1950s has been reborn and through the application of software and hardware technology has been brought into the next century.

Through the kiosk station which acts as a computer age "listening booth", the consumer as a subscriber is put in contact with his purchases by having offered the ability to preview music before purchasing selections at record stores. The guesswork is taken out of music buying by offering more informed purchase decisions comparable with those available for other consumer products.

The kiosk station provides access to music products through sampling individual selections as discrete increments of information and allows the subscriber to make more educated purchases. The kiosk station will thereby dramatically change the

way in which consumers purchase music. This increases buying activity and improves overall customer satisfaction. Moreover, the present invention stimulates sales gains for the record stores and provides record companies a cheaper and more effective promotional alternative which can sample consumer opinions at the point-of-sale level.

The present invention utilizes a graphical interface software, a hi-resolution touchscreen monitor, and unprecedented storage capacity. Each system can offer the consumer the ability to preview selections from up to 25,000 albums, thus allowing more informed purchasing decisions by listening to songs on an album in a mode as uninhibited as using a telephone. The customer simply takes any music selection in the store display and approaches the kiosk. After scanning their user/subscriber card (free to the user, available at the store counter) across the UBC bar code reader, the customer scans their chosen audio selection and up on the touch screen monitor appears the album cover in full color photographs along with songs from the album. The user then simply touches the name of the desired song on the screen, and, through the privacy of headphones, listens to a 30 second clip of the audio program. Additional options include full motion MTV videos or Rolling Stone record reviews. The listening booth of the 1950s has been reborn and through the application of software and hardware technology, brought into the 1990s.

Because of the high level of software content, the present invention remains flexible and dynamic. The interactive touchscreen can be programmed to accommodate multiple applications running under one environment on one system. Touchscreen interface can

be continually modified with additional features added over time. This encourages subscriber interest and permits a competitive advantage over competitors who have locked their design into predominately hardware configurations with little value-added software content.

5 The selection and input data from the subscriber is collected from each kiosk location and is transmitted to be stored in a central database for  
10 analysis by the central processing unit. Through the central processing unit, the subscriber selection and subscriber profile data can be analyzed, packaged, and distributed as information products to the entire music industry as timely and focused market research.

15 It is therefore an object of the present invention to provide a computer age "listening booth." Consumers will be offered the ability to preview music before purchasing selections at record stores. Preview and associated purchase data is  
20 collected and stored to provide music industry market research data.

Another object of the present invention is to take the "guesswork" out of music buying offering more informed purchase decisions comparable with  
25 those available for other consumer products. The present invention provides access to music products through sampling of individual selections and allows the consumer to make more educated purchases. This increases buying activity and improves overall  
30 customer satisfaction.

Further objects and advantages of this invention will become more apparent in light of the following drawings and description of the preferred embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of a typical apparatus used in the invention.

Fig. 2 is a block diagram showing the functions of devices which comprise the apparatus of the present invention.

Fig. 3 is a view of a typical touchscreen software generated display interface used in the apparatus of the present invention.

Fig. 4 is a different view of a typical touchscreen software generated display interface used in the apparatus of the present invention having further a point-of-purchase capacity.

DESCRIPTION OF THE PREFERRED EMBODIMENTS OF THE INVENTION

The present invention will be described here with reference to sampling and previewing audio compact discs, but those of ordinary skill in the art will recognize that other applications are possible and are intended to be within the scope of the present invention.

Referring to Fig. 1 of the drawings, there is a kiosk station 10 shown embodying the principles of this invention. The kiosk station 10 utilizes a custom, graphical interface (not shown), proprietary software, a hi-resolution touchscreen monitor 20, and data storage capacity. Each kiosk station 10 is provided with data compression technology which is state-of-the-art. The data compression technology is available from Fredericks and Shoe in Chicago, Illinois. The core of the kiosk station 10 is this digital compression technology, coupled with the storage and playback design. An application specific integrated circuit (ASIC) chip serves in the data compression and decoding component of the kiosk

station 10. This ASIC firmware is integrated onto a custom-designed board which delivers 24 bit graphics, full motion video digital signal processing and decompression of the audio information to the subscriber. The new combination of bus technology provides for a high resolution, high quality, user friendly subscriber interface at the kiosk station 10.

On an ongoing basis music CDs are identified for addition to the kiosk station 10 storage. Once the audio samples are identified, the samples are encoded at the CD authoring station. Music CDs are digitized and encoded for storage on a CD ROM discs. The record jacket associated with each preview album is scanned and digitized. A Macintosh Sound Tool, which is a stereo direct-to-disc recording and playback system is used to process the digital signal to the CD. A Topiz CD Premaster/Encoding System or the like is used. In addition, manufacturers' UBC bar code data corresponding to the selected albums is copied and stored. The compression technology permits high capacity storage on CD ROM discs in the kiosk body 50. Each kiosk station 10 can offer the subscriber the ability to preview selections from up to 25,000 albums, thereby allowing more informed purchasing decisions by listening to songs on an album in a mode as uninhibited as using a telephone. Preview selections may be expanded or changed by changing the data on the CD ROM discs. The CD ROM discs are stored in a CD automatic disc loader. A Sony Auto Disc Loader CDK-006 can be used. This loader can house up to 60 CD ROM discs and is controlled by an external 8-bit microprocessor control system. When a subscriber scans in an album and touches selections, the disc loader will automatically scan to the



appropriate slot on the disk tray. An Apple  
MacIntosh platform is used with a CDSC which is a CD  
ROM drive capable of reading data and audio disks or  
the like. CD ROM interface can be accomplished with  
5 a Hypercard or its equivalent. In addition, the  
database code will create a file for data collection  
each time a subscriber begins a preview session.  
This will identify a specific subscriber with the  
selections and ratings which were processed and the  
10 kiosk station 10.

To excite the subscriber, and inspire him to  
pick up an album from the CD rack and preview it on  
the kiosk station, the retail store can also be  
provided with a library of CD ROM discs. For  
15 example, 600 minutes of top 200 song cuts can be  
offered on a single CD ROM disc. These discs can be  
played for an entire 10 hours period without  
changing. The length of the CD means that there is  
no recurring pattern or loop. Musical selections  
20 will vary from Rock, to Jazz, to Classical, etc. with  
widespread appeal. This CD ROM disc sampler will  
contain songs from albums found on the kiosk station.  
In that way, a subscriber can become interested in a  
cut heard over the store's in-house sound system,  
25 approach the clerk and ask for the album or the  
artist responsible, and then proceed to pick out  
their selection.

To use the invention, the subscriber takes any  
music selection in the store display and approaches  
30 the kiosk station 10. The subscriber is provided  
with an access card, similar to a credit card, which  
is used to activate the kiosk station 10. The system  
interface is based on a touchscreen 20 and activated  
by the access card which is passed over a UPC

scanner. There is no keyboard to add to levels of confusion or intimidation.

5 Each customer can complete a brief membership application which asks for basis demographic information, general music listening preferences and buying habits and an access card will then be generated for that subscriber. Each subscriber will have a barcode on their access card which will immediately identify them when beginning a session on  
10 the kiosk station 10. The subscriber identification can be further interfaced with the music store cash register so that with each music purchase following CD preview, the transaction will be identified as a kiosk-related sale.

15 A program similar to an airline frequent flyer club can be generated. The central database 60 can maintain a library of subscribers with subscriber profile information and specific preview activity. In order to incentivize subscribers to use the kiosk  
20 station 10 regularly, subscribers will earn bonus points for answering the rating questions after previewing selections at the kiosk station 10. Earned bonus points will also accumulate for kiosk-related purchases. Through a combination of rating  
25 and purchase bonus points, subscribers will become eligible for discounted and even free music sponsored by music industry participants.

Subscribers may additionally be sent quarterly statements showing a list of albums previewed and  
30 kiosk-related purchases. Listings of new releases on the kiosk stations 10, as well as various promotions sponsored by recording labels and music stores, can be disseminated to the subscribers by generation of a news letter update. Subscriber mailing lists can be  
35 used to send additional promotional material.

After scanning the access card across the barcode reader 30 which can use multiple mirrors to enhance the scan rate for a dense scan such as the MS 700 manufactured by Metrologic of Camden,  
5 New Jersey, the subscriber scans the bar code of the CD chosen, and up on the touchscreen 20 appears the album cover in full color photographs along with songs from the album. The subscriber then touches the desired song at the desired location of the  
10 touchscreen 20 and through the headphones 40 listens to a 30 second clip. Additional options include full motion MTV videos or record reviews.

The access card which is used to activate the kiosk station 10 can be used to monitor all  
15 subscriber activities and to generate, for example, demographic information and market research.

Referring now to Fig. 2 there is shown a block diagram demonstrating the apparatus including the storage and transmission to a centralized database 60  
20 for analysis by the central processing unit 70. Each time a subscriber activates the kiosk at the scanner 50 to begin a session, a data file is created identifying the subscriber and generating a selection preview. Additional information in the form of  
25 responses to rating questions for the selection CD and purchase indications can also be captured in the data file. The centralized database 60 can poll each kiosk station 10 at all of the remote locations through a telecommunications link. The information  
30 gathered will be analyzed and packaged into market research products for distribution in the record industry and radio stations.

Figure 2 demonstrates that the selection choice and subscriber data can be transmitted via a public  
35 data network 80 for analysis by use of and Executive

Information System (EIS) 90. Such systems provide the capabilities to analyze vast amounts of data and to convert this data into useful information on a real-time basis. EIS's allow non-programmers access to large quantities of data through an intuitive user interface. EIS's have built in tools which make modelling much easier than conventional spreadsheet or database software. The software and technical support of a major telecommunications and information network, such as Comshare, can be used. This EIS software operates in a distributed and portable environment. In addition, the EIS used will be supported on multiple platforms and operating systems. This provides for delivery of proprietary data and its analysis appropriate to the business needs of the record industry. A key attribute to most EIS systems is the provision for multidimensional data dimensions which, in the music industry, may include unit sales, time periods, geographic markets, specific music categories, configuration breakdowns, and demographic profiles of the subscriber base. The capabilities of CD ROM discs will allow for the periodic delivery of market research to the record industry on CD ROM discs.

Figs. 3 and 4 show various software configured touchscreen display interfaces. Because the touchscreen is matrix generated by software configuration, it is flexible and dynamic. The touchscreen can be programmed to accommodate multiple applications running under one environment on one system as demonstrated in Figs. 3 and 4. The software configuration provides for modified with additional features added over time by software modification.

Accordingly, modifications and variations to which the invention is susceptible may be practiced without departing from the scope and intent of the appended claims.